What is claimed is:

1. A method for determining a target spectrum for a light source to be used in a projection system in which light from the light source is: (i) split into sub-portions either spatially or in time, (ii) the sub-portions are filtered through red, green, and blue filters, and (iii) the filtered sub-portions are recombined as a colored image on a screen (the "splitting/filtering/recombining process"), said method comprising:

(A) specifying desired color coordinates for red light, green light, and blue light;

(B) specifying desired color coordinates for white light produced by the splitting/filtering/recombining process (the "recombined white light");

(C) specifying a set of filter characteristics for the red, green, and blue filters; and

(D) determining either (i) a target spectrum for the light source or (ii) a combination of a target spectrum for the light source and a revised set of filter characteristics for the red, green, and blue filters based on a combination of criteria which includes:

(a) reducing differences between calculated color coordinates for filtered red light, filtered green light and filtered blue light and the specified desired color coordinates for those lights;

(b) reducing differences between calculated color coordinates for recombined white light and the specified desired color coordinates for that light; and

(c) increasing calculated light transmission efficiency for the splitting/filtering/recombining process.

2. The method of Claim 1 wherein in step (C), the set of filter characteristics for the red, green, and blue filters are specified in terms of cutoff points for the filters.

3. The method of Claim 2 wherein the set of filter characteristics are for ideal red, green, and blue filters which respectively correspond to actual red, green, and blue filters, and the cutoff points are equal to the 50% transmission points for the actual filters.

4. The method of Claim 1 wherein in step (D), the calculated light transmission efficiency is based on a calculated photopic weighted intensity for the target light source spectrum and a calculated photopic weighted intensity for the recombined white light.

5. The method of Claim 1 wherein in step (D), calculated light transmission efficiency is increased by minimizing additional filtering of red light, green light, and blue light beyond that introduced in connection with criterion (a).

6. The method of Claim 1 wherein in step (D), criteria (a) and (b) are given precedence over criterion (c).

7. The method of Claim 1 wherein in step (D), the target spectrum for the light source or the combination of the target spectrum for the light source and the revised set of filter characteristics for the red, green, and blue filters is determined iteratively.

8. The method of Claim 1 wherein in step (D) only a target spectrum for the light source is determined.

9. A method for constructing a projection system comprising:

(I) determining a target spectrum for a light source using the method of Claim 1;

(II) selecting a light source based on step (I);

(III) selecting red, green, and blue filters based on a set of target filter characteristics for those filters where the set of target filter characteristics are either the set of filter characteristics specified in step (C) of Claim 1 or, if revised, the revised set of filter characteristics determined in step (D) of Claim 1; and

(IV) constructing a projection system using the light source selected in step (II) and the filters selected in step (III).

10. The method of Claim 9 wherein the spectrum of the light source selected in step (II) is not identical to the target spectrum determined in step (I).

11. The method of Claim 9 wherein the filter characteristics of the red, green, and blue filters selected in step (III) are not identical to the set of target filter characteristics.

12. The method of Claim 9 wherein the projection system constructed in step (IV) has a calculated light transmission efficiency for the splitting/filtering/recombining process of at least 75%.

13. The method of Claim 9 wherein the projection system constructed in step (IV) has a calculated light transmission efficiency for the splitting/filtering/recombining process of at least 85%.

14. The method of Claim 9 wherein the projection system constructed in step (IV) has a calculated light transmission efficiency for the splitting/filtering/recombining process of at least 95%.

15. A projection system constructed in accordance with Claim 9 wherein the system has a calculated light transmission efficiency for the splitting/filtering/recombining process of at least 75%.

16. A projection system constructed in accordance with Claim 9 wherein the system has a calculated light transmission efficiency for the splitting/filtering/recombining process of at least 85%.

17. A projection system constructed in accordance with Claim 9 wherein the system has a calculated light transmission efficiency for the splitting/filtering/recombining process of at least 95%.

18. A projection system comprising a light source and a plurality of color filters wherein:

(A) the light source has a measured distribution of optical power as a function of wavelength $S(\lambda)$;

(B) the light source has a photopic weighted intensity $Y(\lambda)$ obtained by mathematically filtering $S(\lambda)$ with a filter having the sensitivity of the human eye;

(C) the color filters have measured 50% cutoff points; and

(D) when:

(i) the measured 50% cutoff points are used to define ideal filters,

(ii) the ideal filters are mathematically applied to $S(\lambda)$ to produce a plurality of filtered lights, and

(iii) the plurality of filtered lights are mathematically combined to produce simulated white light,

the simulated white light so obtained has a calculated photopic weighted intensity $Yb(\lambda)$ the integral of which over the visible spectrum is at least 75% of the integral of $Y(\lambda)$ over the visible spectrum, where the visible spectrum is taken to extend from 390 nm to 770 nm.

19. The projection system of Claim 18 wherein the integral of $Yb(\lambda)$ over the visible spectrum is at least 85% of the integral of $Y(\lambda)$ over the visible spectrum.

20. The projection system of Claim 18 wherein the integral of $Yb(\lambda)$ over the visible spectrum is at least 95% of the integral of $Y(\lambda)$ over the visible spectrum.